

SWAN MODELS PSU-3 AND PSU-4 POWER SUPPLIES

GENERAL DESCRIPTION

The Swan Models PSU-3 and PSU-4 fixed station power supplies are designed to provide all the voltages necessary for operation of Swan vacuum tube type radio transceivers. The PSU-3 provides power for Swan amateur radio transceiver Model 240, those models in the 250 and 350 series, Model 400 and those models in the 500 and 700 series. The PSU-4 provides power for Swan commercial radio transceivers with model numbers in the 300 and 400 series. The PSU-3 and PSU-4 are housed in enclosures that are styled to match Swan transceivers and are finished complete with AC line cord, interconnect cable and a panel mounted power indicator light. In addition, the PSU-3 is equipped with a 5 inch oval speaker and a head-phone jack.

The PSU-3 and PSU-4 are supplied from the factory with internal input connections for 117 VAC, 50 to 60 Hz operation. The schematic diagram and illustration of the input power terminal strip, which are reproduced on the reverse of this sheet, show the internal connections for 230 VAC, 50 to 60 Hz operation. The procedure for reconnection for 230 VAC operation is detailed in the paragraph on installation and can be easily accomplished in the field.

ELECTRICAL DESIGN

The Models PSU-3 and PSU-4 are conservatively designed for long life and reliable service when used with the Swan transceivers of the models listed above. Service, when required, is easily accomplished as all components are readily accessible and may be tested and replaced in a minimum of time. The circuits are quite conventional using silicon bridge rectifiers for the high voltage sources and single silicon rectifiers for the low voltage, negative bias supply and positive relay supply. Two primary windings on the power transformer are connected in parallel for 117 VAC operation and in series for 230 VAC operation. A three foot long, multiconductor cable, equipped with a connector that mates with the power connector of the associated transceiver provides for interconnection of the two units.

INSTALLATION

117 VAC Operation

For 117 VAC operation, installation requires that the connector on the end of the multiconductor cable of the power supply be pushed onto the mating connector of the radio transceiver. The line cord is then plugged into the wall receptacle. The front panel power switch on the radio transceiver will then control application of power to the primary windings of the power supply transformer.

230 VAC Operation

To operate the PSU-3 or PSU-4 from a 230 VAC source, it is necessary to reconnect the transformer primary winding connections. The cover must be removed and is accomplished by removing three screws on each side of the unit that attach the cover. Then, lift the cover from the unit.

CAUTION

The PSU-3 and PSU-4 power supplies use and generate electrical voltages that are dangerous to life. Verify that the line cord is removed from the wall receptacle whenever the cover is to be removed. Dangerous voltages are present when the line cord is plugged in whether the power switch on the associated transceiver is in the ON or OFF position.

Remove the screw from the bottom of the chassis and two from the rear panel that attach the circuit board to the chassis. Gently pull the board forward and outward to provide easy access to the input power terminal strip mounted on the chassis. Disconnect the transformer input wires from the terminal strip and reconnect them as shown in Figure 1 on the reverse page.

CAUTION

One of the brown wires from the front panel neon indicator lamp must be connected to the orange transformer lead and the other to the brown transformer lead as shown in the schematic diagram and in Figure 1. This connection provides 117 VAC to the indicator. If the indicator is connected to 230 VAC, it will be destroyed.



Reinstall the circuit board and cover using the hardware that was removed. Replace the 6 ampere fuse with a 3 ampere fuse. Push the connector on the end of the multiconductor cable onto the mating connector of the associated transceiver. The line cord can then be plugged into the wall receptacle.

NOTE

It may be necessary to replace the line cord connector with another that mates with a polarized 230 VAC wall receptacle.

OPERATION

There are no special operational procedures for the PSU-3 and PSU-4 power supplies. Primary power application to the power supply transformer will be controlled by the front panel POWER switch on the associated radio transceiver and the audio level from the speaker of the PSU-3 will be controlled by the VOLUME control of the transceiver. Inserting a headphone plug in the phone jack of the PSU-3 will disconnect the speaker and the headphone volume will be controlled by the VOLUME control of the transceiver.

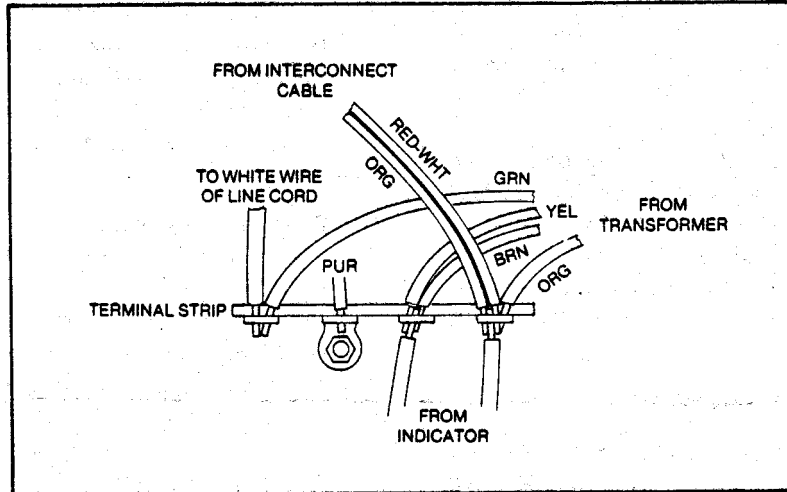


Figure 1. Connections for 230 VAC Operation.

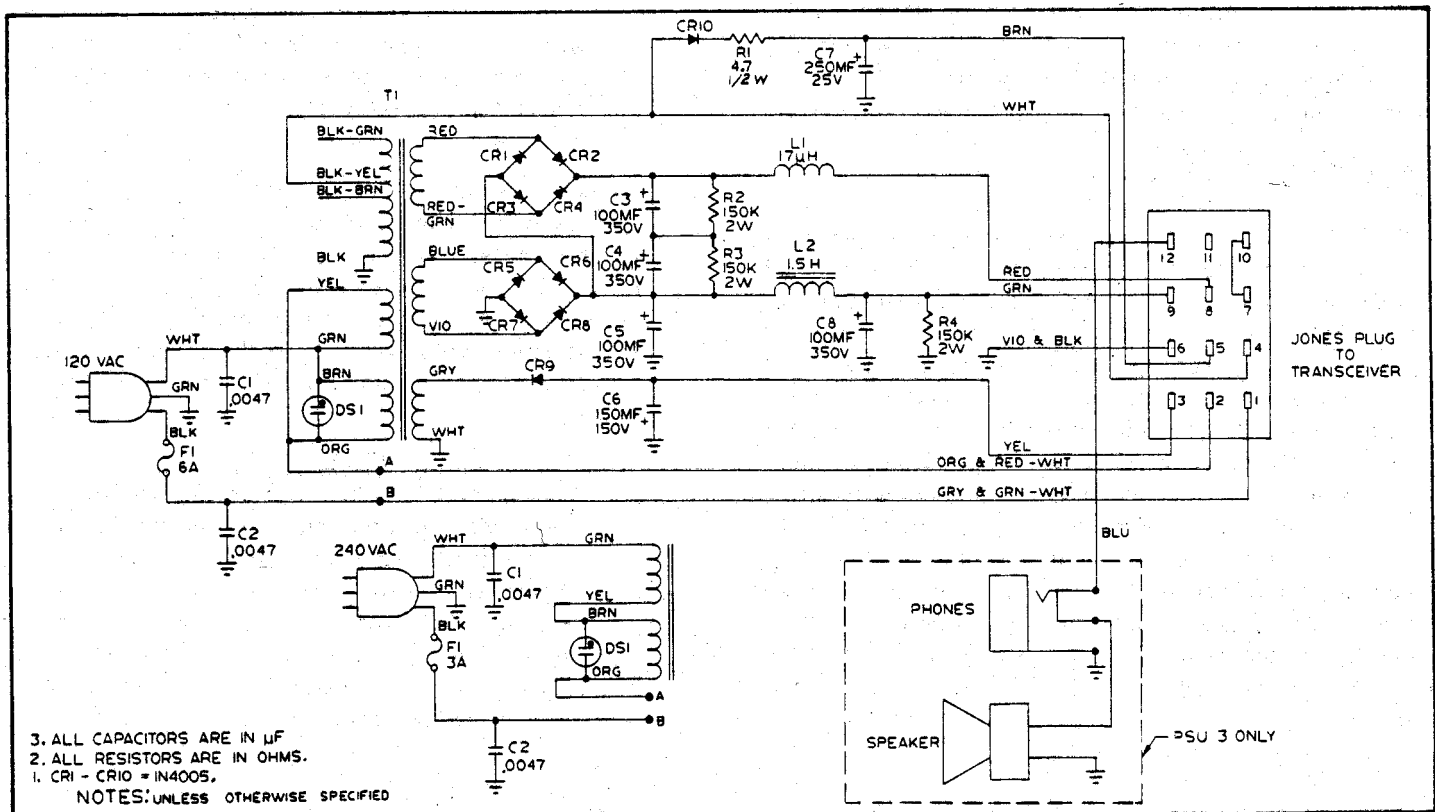


Figure 2. Schematic Diagram.